Bark Beetle Incident

Implementation Plan
(2007 to 2011)

Narrative

August 29, 2007

Introduction

The *Bark Beetle Incident Implementation Plan (FY2007 – FY2011)* provides a strategy with a detailed multi-year implementation schedule of integrated projects to enable the Forest Service to efficiently and effectively address the impacts associated with the mountain pine beetle epidemic in lodgepole pine on National Forest System lands. It provides information necessary to develop collaborative opportunities to combat the bark beetle effects across different land ownerships affected by the mountain pine beetle epidemic.

The Implementation Plan focuses on forest vegetation management, wildfire hazard reduction, and prevention and mitigation actions for recreation and public infrastructure. The Plan identifies projects in four activity programs:

- Timber Salvage Sales and Stewardship Projects
- Hazardous Fuel Reduction
- Forest Health - Spraying
- Hazard Tree Reduction

The 2008 program of work is the primary focus of the Implementation Plan. Out year projects beyond 2008 are less defined and will be developed in more detail in a collaborative process with our partners and the public in the next step in this planning process. The Implementation Plan shows the 2006 program of work as a historical

baseline for comparison with subsequent years. The 2007 program of work represents current and ongoing activities.

Planning is an iterative process and will need to occur periodically throughout the Bark Beetle Incident. The Implementation Plan is a dynamic document. The program of work is fluid and changes will occur throughout the year as priorities, funding, and conditions change.

Scope of the Implementation Plan

The Implementation Plan focuses on the mountain pine beetle epidemic in lodgepole pine stands on National Forest System lands in Summit, Eagle, Grand, Jackson, and Routt Counties in Colorado and Albany and Carbon Counties in Wyoming as shown in Table 1. This includes portions of the White River, Arapahoe and Roosevelt, and Medicine Bow and Routt National Forests. While there are insect epidemics affecting other counties and in different forest types, this plan focuses on the most severe areas of lodgepole pine bark beetle infestation. The insect epidemics in other counties are being dealt with in other work plans. Additional counties may be added to this plan as needed.

Table 1. Counties, States, and National Forest covered by the Implementation Plan

County	State	National Forest
Summit	Colorado	White River
Eagle	Colorado	White River
Grand	Colorado	Arapaho and Roosevelt
Jackson	Colorado	Arapaho and Roosevelt, Routt
Routt	Colorado	Routt
Albany	Wyoming	Medicine Bow
Carbon	Wyoming	Medicine Bow

Treatments

The Implementation Plan is shown in detail in the *Bark Beetle Implementation Plan (FY2007 to FY2011)*. The Implementation Plan provides estimated acreage, outputs, and current status for each action item by activity category and by fiscal year.

The timber, fuel treatment, forest health, and hazard reduction programs have been relatively small stable programs until recently. The Forest Service recognized the need to significantly increase these programs in order to respond to the bark beetle epidemic. The proposed levels of treatments are based on estimated funding and work capability.

Treatment activities are integrated where possible. For example, a timber salvage sale would remove beetle-killed timber which both reduces fuel loading and recovers some

economic value from wood products. The same timber salvage area could also receive additional fuel treatments such as slash manipulation and/or burning. Both the individual activity acres and the overall area treated (the footprint area) are shown in the Plan. A summary of the proposed acres under each treatment category by year is displayed in *Table 2* and *Figure 1*. Figure 2 provides a summary of the total footprint acres treated.

Table 2. Summary of Proposed Treatment Acres by Treatment Category and by Year

Treatment Category	Year					
	2006	2007	2008	2009	2010	2011
Timber Salvage and Stewardship Projects	5,000	9,100	10,000	10,600	5,600	4,400
Fuels Treatments (All types)	5,000	11,300	24,200	15,000	13,600	8,800
Forest Health	1,000	1,000	2,000	500	500	500
Hazard Reduction	0	100	3,500	6,900	300	300
Total Footprint Area Treated	7,000	15,000	26,000	32,000	14,000	10,000

Figure 1. Summary of Total Proposed Treatment Acres by Activity and Fiscal Year

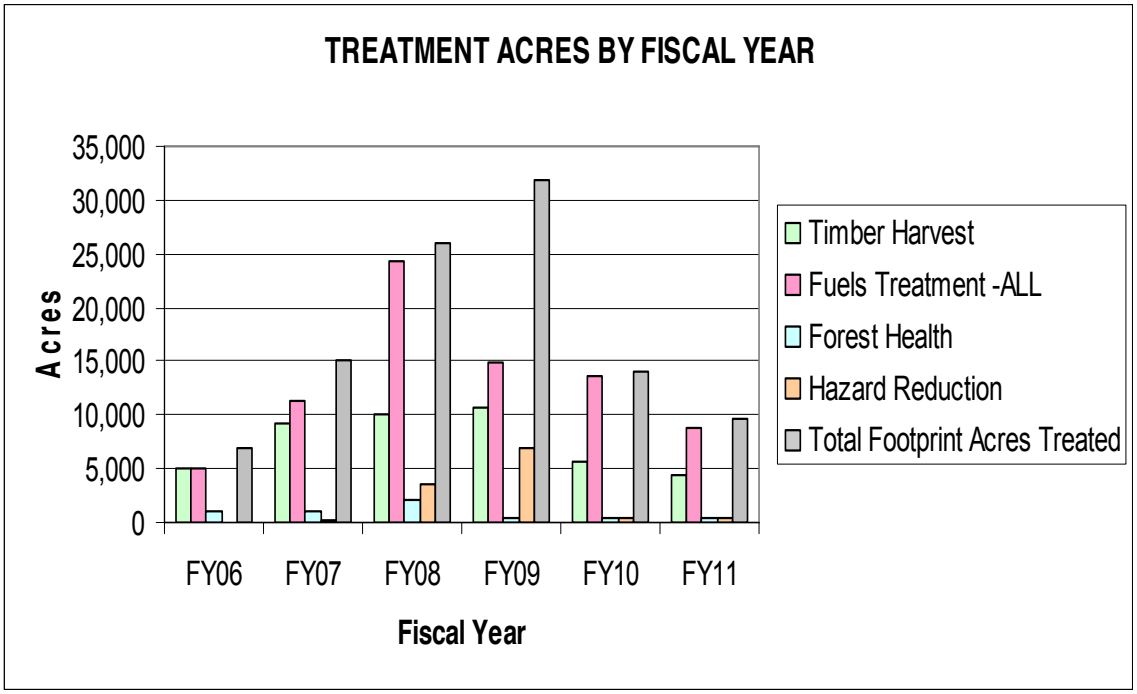
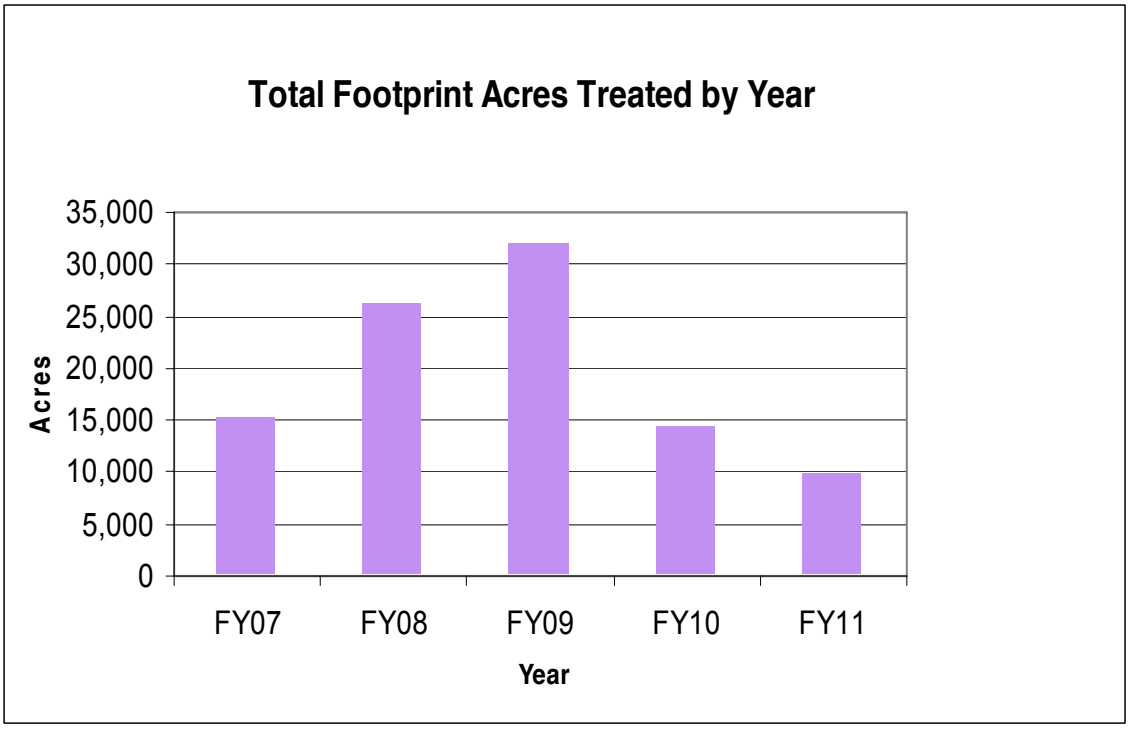


Figure 2. Summary of Proposed Footprint Acres Treated by Year



Some items to note:

- The 2007 treatments increase over 2006 levels because of funding increases.
- The 2008 program continues to increase treatments with a focus on projects approved through the National Environmental Policy Act (NEPA) process. It will require additional funding above 2007 levels.
- The areas treated in the years beyond 2008 are likely to be greater than shown. They will be addressed in more detail during the next step in the planning process once the entire landscape has been evaluated to determine treatable areas. The priority of treatments will also be developed with input from our partners based on management needs and funding levels.
- Ongoing collaboration with the public, local governments and other agencies will continue and will help refine the implementation plan for the out-years (FY 09 through FY 11).

Timber Salvage Sale and Stewardship Projects

Timber vegetation treatments are being accelerated to respond to the bark beetle epidemic by moving projects forward from the planning stage, as well as developing new projects that integrate timber salvage with other activities such as hazardous fuel reduction. Accelerated timber salvage is necessary because beetle-killed timber quickly loses its commercial value for sawtimber due to rot and checking (*i.e.*, cracks). This typically occurs within 3-5 years following infestation.

Timber sales are focused on salvage or the removal of dead trees, beetle-infested trees, and trees highly susceptible to the mountain pine beetle. Timber salvage sales can be a cost effective method to increase public safety by removing hazard trees, as well as reducing hazardous fuels. Timber salvage sales also help establish desired conditions needed for the development of the next forest. Timber salvage is generally limited to areas where the dead trees have commercial value.

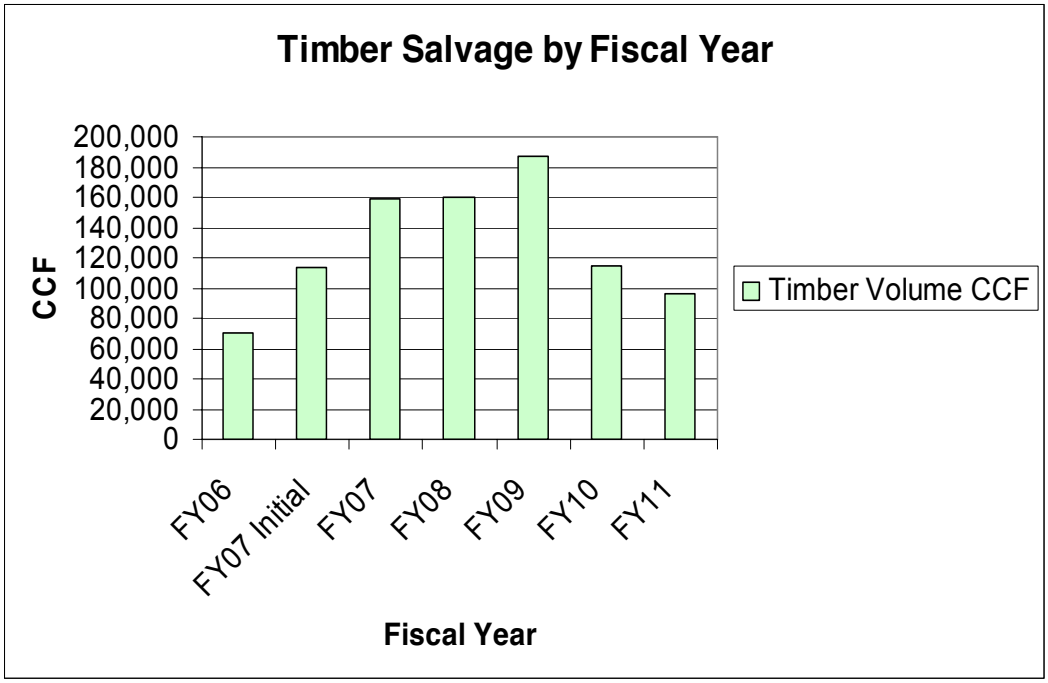
Stewardship contracts can blend timber salvage sales with service contracts where the Forest Service exchanges forest products for contract work such as fuel reduction. Stewardship contracts are being developed where timber values are too low to accomplish management objectives or where different treatments can be combined in one area to maximize the overall benefit.

A summary of the proposed accelerated timber salvage program by year is displayed in *Table 3* and *Figure 3*.

Table 3. Proposed Timber Salvage Volume by Fiscal Year

Fiscal Year	Proposed Timber Salvage Volume (CCF)
2006	70,000
2007 Initial Budget	113,000
2007 Final Budget	159,000
2008	160,000
2009	187,000
2010	114,000
2011	96,000

Figure 3. Proposed Timber Salvage Volume by Fiscal Year



Items to note:

- The 2007 timber salvage program represents a 220% increase over 2006 levels due to the increased emphasis on timber salvage and the results of increased funding, including $2 million received from the efforts of the Colorado Congressional Delegation.

- The 2008 accelerated program consists of the projects which have a completed environmental analysis and approval under National Environmental Policy Act (NEPA). This, in effect, has used up the available "shelf stock" of approved projects. It often takes more than a year to complete the required environmental analysis before a project can occur; therefore, the 2008 program also accelerates NEPA planning to ensure that activities can occur in the out-years.

- The 2009 program continues the increase in timber salvage. It depends on the accelerated NEPA planning in 2008. It also assumes that substantial planning efforts will continue in 2009 in order to support out-year programs.

- While 2010 and 2011 show a decline in timber salvage activity from 2009, the timber salvage program is expected to be much higher than shown, provided there is sufficient funding and a market demand for sawtimber and biomass forest products. These later years will be addressed in more detail during the next step

in the planning process as the Forest Service and its partners develop more focused treatment strategies and priorities.

- The market demand for timber products and the declining value of beetle-killed timber are significant issues which may affect this plan. Salvage sales with economic value provide the greatest opportunity to treat larger areas and also provide stewardship opportunities. Sawlogs currently provide the highest forest product value for salvage. Forest products are expected to shift from sawlogs to other 'non-sawtimber' products as beetle-killed trees deteriorate within a few years of being infested. Once trees fall to the ground, deterioration is rapid and any economic value is reduced or lost.

- It is assumed that industry capacity (including development of processing facilities other than sawmills) will increase to handle the increase in outputs. By 2009 or 2010, it is expected that timber markets may start switching from lumber to chips, biomass, or houselogs as other processing facilities come into production.

- There could be long-term (10 or more years) stewardship contract opportunities beginning in FY08 focused on roadside hazard tree removal and/or biomass production.

- About 20% of the timber salvage volume comes from the Medicine Bow National Forest in Wyoming while the remaining volume comes from the Colorado Forests. This percentage is expected to increase as the beetle epidemic progresses north into Wyoming, and as the sawtimber wood begins to deteriorate and loses commercial value in Colorado.

- The timber salvage sale program has peaked in Grand County, the epicenter of the epidemic, because most areas suitable for timber salvage sales are already in planning or under contract, or the wood has already deteriorated to the degree that it can no longer be sold as sawtimber.

Fuels Projects

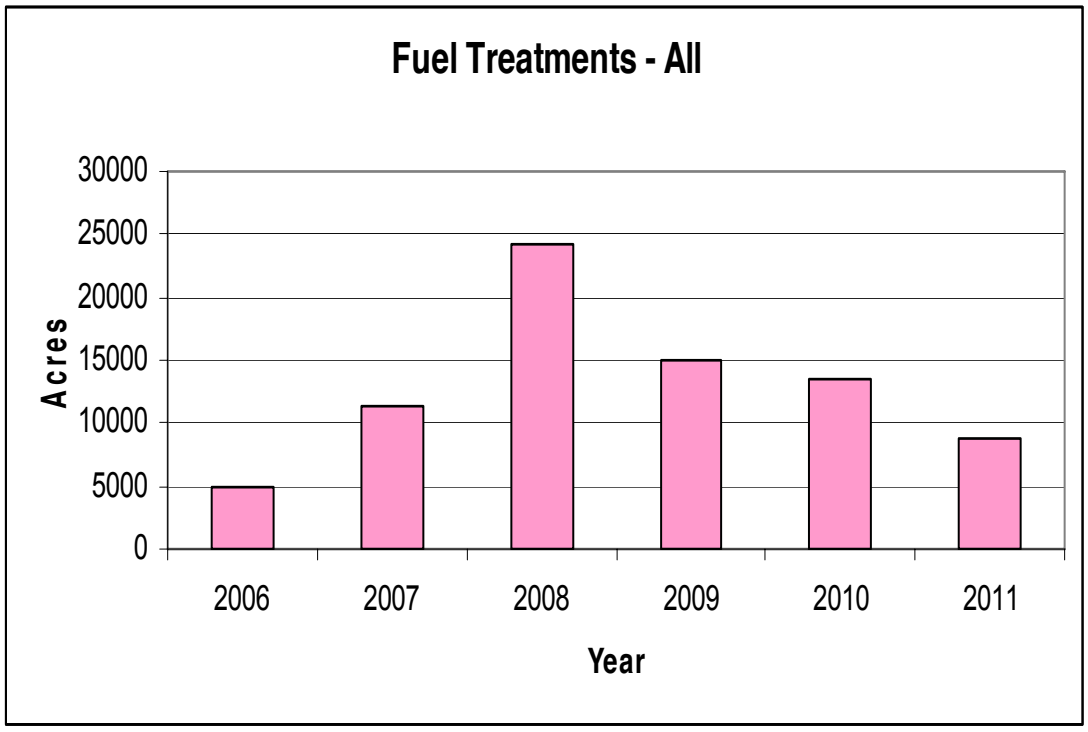
The hazardous fuels program has historically been relatively small due to the high cost of mechanical treatments in lodgepole pine stands. With the dramatic increase in hazardous fuels due to dead trees from the beetle infestation, local communities are now very interested in management to reduce the fuel hazard. The Forest Service has significantly increased the hazardous fuel program in response to the bark beetle epidemic and public expectations.

Hazardous fuel reduction projects are accomplished in a variety of ways and are often a result of other treatments such as timber salvage. Hazardous fuel reduction is closely tied

with the timber sale program because the high fuel loads associated with lodgepole pine generally require material to be removed to reduce the hazard. This is typically done with mechanized equipment. Fuel reduction by prescribed burning is generally not done in lodgepole pine stands because the trees have thin bark and rarely survive surface fires, unlike ponderosa pine.

A summary of the accelerating hazardous fuel reduction plan is shown *Table 2* and *Figure 1*. *Figure 4* displays the proposed fuel treatment acreage.

Figure 4. Summary of Proposed Fuel Treatment Acres by Year



Items to note:

- About 80% of the 2007 fuel projects treat Wildland Urban Interface (WUI) areas. This increases to greater than 90% in the subsequent years of the plan.

- The 2007 fuel treatments increased over 2006 levels due to increases in funding.

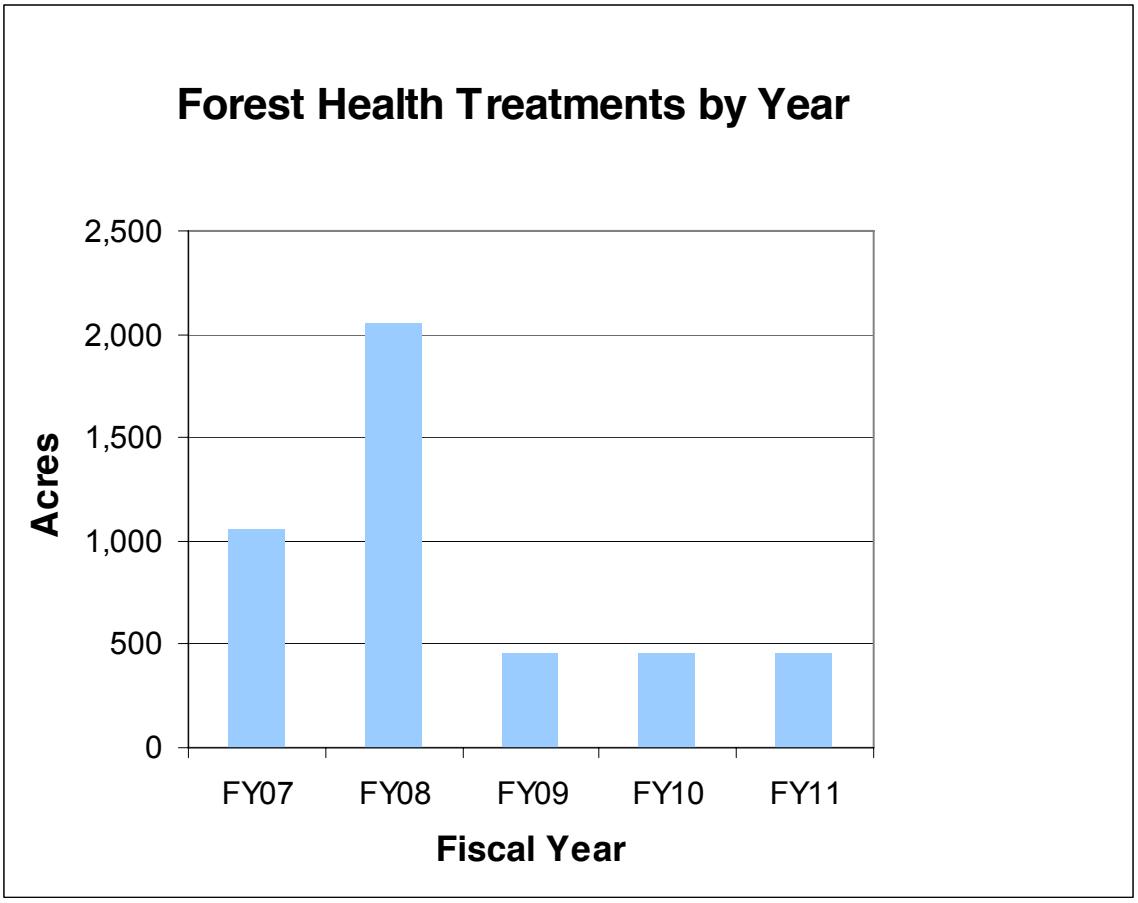
- The 2008 fuels treatment program proposes nearly doubling the 2007 level. Projects implement existing NEPA-approved decisions. Fuels treatment will peak in 2008 and then decline unless the 2008 program includes an intensive NEPA planning effort.

- While the out-year programs currently show a decline after 2008, it is anticipated that they will increase as additional planning occurs with an aggressive focus on treating beetle-killed timber and continued partner and community support.

Forest Health Projects

Forest health projects consist primarily of preventive spraying of high-value trees with insecticides in developed recreational areas such as campgrounds, picnic areas, trailheads, and ski areas. Other traditional forest health projects such as thinning and/or removal of individual beetle-infested trees are ineffective to control an epidemic of this magnitude. *Table 2* and *Figure 1* display a summary of the forest health treatment acres. *Figure 5* displays the proposed forest health treatment acreage by year.

Figure 5. Summary of Proposed Forest Health Treatment Acreage by Year



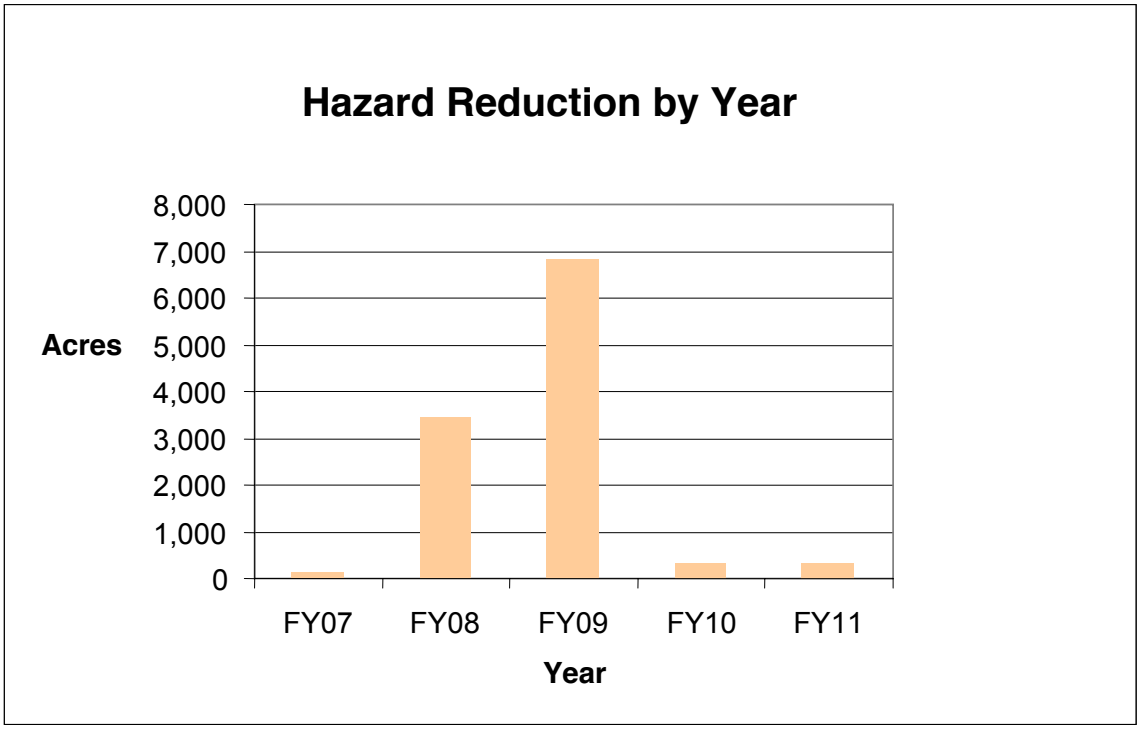
Items to note:

- The 2007 forest health treatments increased over 2006 levels due to increases in funding.
- The FY08 forest health program proposes to double the acres treated in FY07.
- The out-years starting in FY09 show a decline in acres treated because the beetle epidemic is expected to have run its course in many areas. Additional treatments may not be needed or may not be cost-effective.
- Forest health projects planned after FY08 will be addressed in more detail in future analysis as the beetle epidemic progresses and the effectiveness of treatments is determined. The acres are expected to be higher than shown.

Hazard Reduction Projects

The bark beetle epidemic has resulted in dead and dying trees along roads, trails and within developed recreational sites and work centers. These trees are a hazard to the public as they decay and fall. Hazard reduction projects consist primarily of the removal of dead and dying trees along public infrastructure; roads, trails, and developed recreation and administrative sites. *Table 2* and *Figure 1* display a summary of the hazard reduction treatment acres. *Figure 6* displays the proposed hazard reduction acreage by year.

Figure 6. Summary of Proposed Hazard Reduction Treatment Acres by Year



Items to note:

- Efforts in 2007 focused primarily on planning. However, treatment has been and is occurring in developed recreation and administrative sites as part of the hazardous fuel reduction program and as part of campground maintenance.

- Hazard tree reduction projects, primarily along roadways, increase significantly in 2008. Continued work in developed recreation sites will be a priority.

- Hazard tree reduction is expected to peak in 2009 or 2010. Treatment needs are expected to increase significantly in the out-years as trees start falling due to rot. There are many miles of roads and trails which will need to be treated within the three forests.

- Some opportunities for hazard tree reduction stewardship contracts may exist along roadways. Many hazard tree reduction projects could be combined with ongoing timber sales. Other areas may require felling the hazard trees without removing them.

Funding

In order to treat the additional 9,980 acres and produce the additional 68,700 CCF of salvage timber volume above the normal work program (based on FY07 initial funding and target levels) proposed by the Implementation Plan for FY08, it is estimated that an additional $6,800,000 will be needed above the initial FY07 funding levels. Additional analysis of funding needs will occur once the Fiscal Year 2008 budget is received. The final budget for fiscal year 2008 will determine the actual amount of additional work that can be accomplished. The forests will continue to look at ways to become more efficient and effective within limited budgets, and partner with neighbors to jointly accomplish work across landscape and ownership boundaries.

The Next Step

The next step in implementation planning is to develop the projects beyond 2008 in more detail in a collaborative process with our partners and the public. This will begin in the fall of 2007 as collaborative meetings are held, and as individual ranger districts work with partners and the public to determine needs and priorities. The Implementation Plan will be reassessed regularly and revised as needed to address changes in funding, priorities, and on-the-ground conditions.